Battery-Powered Learning

The boldest experiment in public education in Maine history is under way in every seventh-grade classroom across the state, and the results so far are beyond what anyone expected. By Jeff Clark.

RAY St. Pierre's seventh-grade social studies class at Lyman Moore Middle School in Portland is learning a tough economic lesson. Each pair of students is researching a particular country and putting together a business plan and marketing information to persuade footwear giant Nike to locate its next running-shoe factory in "their" nation. One student is recording a voice-over for his animated presentation to bring Nike to Kenya, while two students next to him are looking up population information and historical background on China and another is studying economic statistics and air-travel routes in India. All of them are beginning to understand why Maine no longer has a shoe industry.

In all, some twenty-four students are hard at work researching, writing, and editing. No one is staring out the window, no one is throwing spitballs, no one is passing notes when St. Pierre looks away. In a classroom full of seventh-grade kids, not a single one of them looks bored, sullen, or distracted. All of them are reading encyclopedias, studying corporate reports, and creating their proposals for presentation to the class, and none of them is using a book or a pencil — all the work is done on their new laptop computers.

St. Pierre's students come from both Munjoy Hill tenements where computers are something other families own and suburban executive homes that have had internet access since the worldwide web was invented. But in St. Pierre's class no one can tell the difference.

Last September Maine's controversial, cutting-edge laptop initiative provided every seventh-grade student in Maine — some 17,000 in all — and their teachers with individual Apple iBook computers, slim notebook units the thickness of a paperback and costing $1,000 or more on the open market. The program expands to eighth-graders next September. The project has been criticized as the biggest waste of taxpayer money the state has ever seen and simultaneously hailed as the most innovative educational reform since the invention of moveable type. All Ray St. Pierre knows is that his students are learning like they've never learned before.

"They're engaged, they're interested, they're coming in here and getting to work," he explains. "The computers have affected discipline for the better. I don't see as many absences as I used to. These kids *want* to come to school now."

Much to the amazement of the program's original critics, the same comments are being heard from one end of the state to the other. Principals and teachers talk about having to patrol the halls and kick computer-engrossed kids out of school at the end of the day so they can go home to supper themselves. At Freeport Middle School a sign on a wall warns, "Students are reminded that they *must* eat lunch."

At Pembroke School in far Down East Maine, one of nine pilot schools that received laptops early last year ahead of the rest of the state, absenteeism dropped 50 percent after the computers arrived, according to school officials. Detentions among misbehaving seventh-grade students dropped 90 percent. Nine out of ten students raised their grades in at least one academic area; eight of ten improved in two subjects; 73 percent in three or more fields.

Two years ago, the school board of SAD 57, which includes the towns of Waterboro, Shapleigh, Alfred, Lyman, and Newfield in southern Maine, passed a resolution vehemently opposing the Maine Laptop Initiative proposed by Governor Angus King. In November the formerly skeptical principal of Shapleigh Middle School was quoted in a *Los Angeles Times* article as saying the laptop program "is changing the face of education."

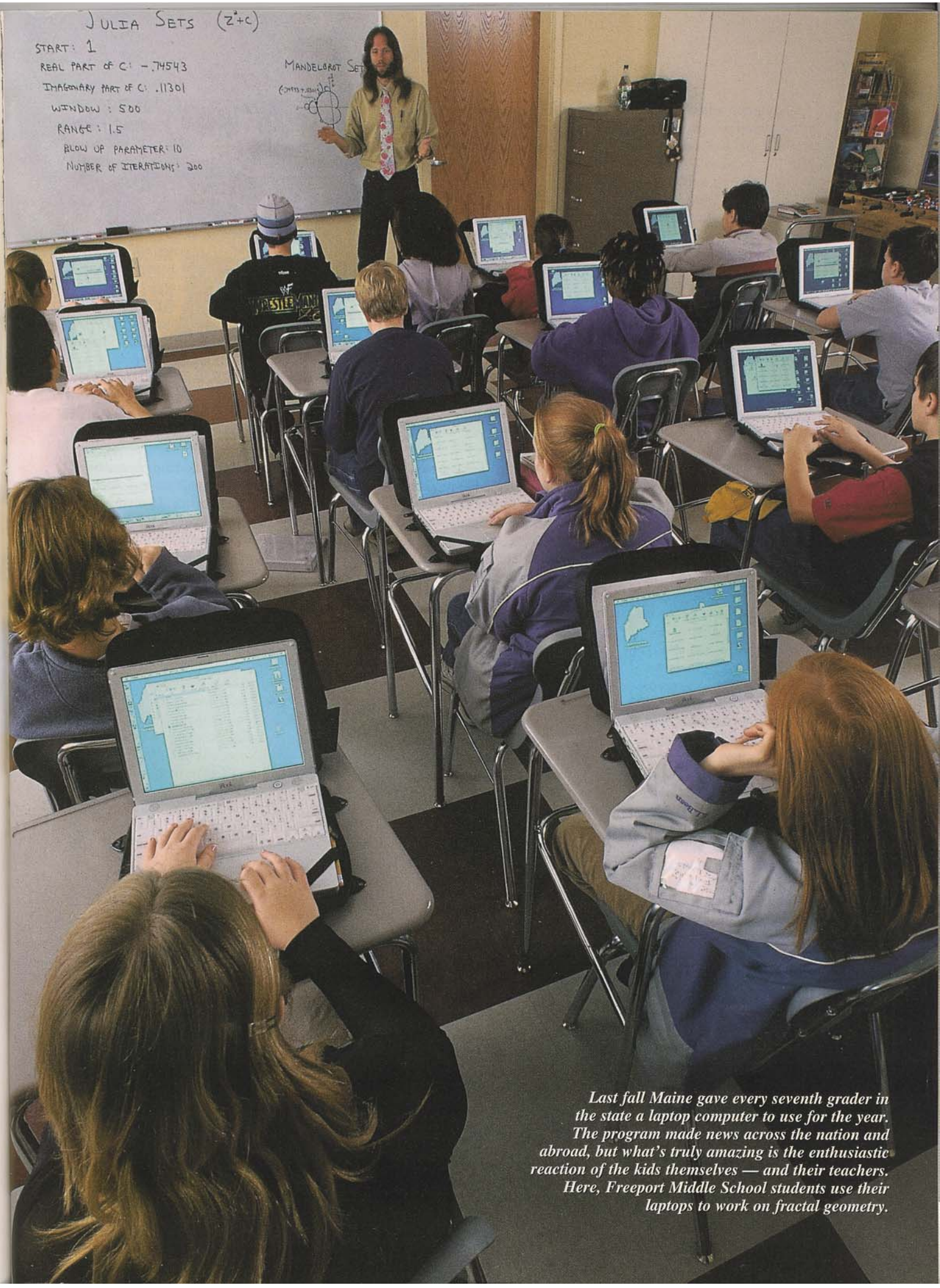
"In books, we read about things, like the architecture of mosques," explains Freeport Middle School student Sophia Wright. "Now we can see what those things look like by going to websites on the internet. I've felt I'm really learning a lot more. I get a lot more excited about school now."

"The laptops have given school a whole new dimension," adds her classmate, Drew Davenport. "You get a lot more information than you'd get with just a teacher talking out of a textbook."

Drew does mention one drawback. "You can't say your dog ate your homework anymore," he says ruefully.

"The word is *engagement*. That's what is happening — beyond any of our expectations," declares former Governor Angus King, an independent who left office in January after eight years as one of the most popular governors in Maine history. "The reality of what this program is accomplish-

Photographs by Benjamin Magro



Last fall Maine gave every seventh grader in the state a laptop computer to use for the year. The program made news across the nation and abroad, but what's truly amazing is the enthusiastic reaction of the kids themselves — and their teachers. Here, Freeport Middle School students use their laptops to work on fractal geometry.

Despite the initial success of the laptop program, some legislators persist in labeling it a frill that is expendable. Middle-school Mainers may not wield much political clout, as this cartoon from the Portland Press Herald *suggests, but their 34,000 parents certainly do.*

ing far exceeds my expectations, and my expectations were pretty high."

King could be excused for indulging in some boosterism for a program that in all likelihood will be remembered as a hallmark of his administration, but his enthusiasm and confidence are echoed in comments from parents, educators, and students across the state. Criticism of the program, while still audible in some quarters, has declined to the point where, when the Maine legislature returned to Augusta in November to slash the state's deficit-ridden budget, the laptop program emerged from the financial bloodbath unscathed. These were the same legislators who, two years ago when the program was first proposed, told King that no other topic had ever generated so much comment from their constituents, and almost all of it was negative.

To say that the program has attracted large amounts of attention is an understatement of almost immeasurable dimensions. An internet Google search on "Maine + laptop" yields 43,100 responses, while "Maine + laptops" adds another 14,200 hits. Articles have appeared in hundreds of newspapers and magazines across the nation. Last year King hosted delegations from Canada, Scotland, and France, all drawn to Maine by the laptop program, and another from Australia was due in January. Governors from across the country have called asking how to start similar projects in their states. The Diocese of Portland is negotiating with Dell to provide notebook computers to parochial-school students around the state.

"The delegation from Edinburgh, Scotland, looked around and they were ready to roll right then and there," King recalls. "It wasn't a question of if, but how soon." He confesses to particular glee at a comment by one member of the Scottish group. "He leaned back in his chair, and he said, 'You know, Governor, Maine is now known as the leading technology state in the world.' "

THE impacts of the laptop program are only beginning to be felt. Über-author and Bangor resident Stephen King has offered to set up interactive writing clinics with seventh-graders all over Maine via laptops. In November Texas-based software giant EDS donated $400 million worth of leading-edge software programs for use in Maine high schools, technical colleges, and state universities. AlphaSmart Inc., of Los Gatos, California, has developed a less-expensive "junior laptop" that runs on the Palm Pilot operating system and is testing a prototype of the product among sixth-graders at Freeport Middle School.

"None of that would have happened without the laptop program, and we haven't even had a full year of experience with it yet," Freeport Middle School principal Chris Toy points out. "This is going to give Maine a lot of opportunities it wouldn't have had otherwise."

Toy calls his students Digital Natives. (An estimated 90 percent of Freeport students have computers at home, while the ratio at Lyman Moore in Portland is closer to 50-50.) "This is a generation of children who have never known a time without computers," he points out. "They've grown up with videogames and X-Boxes and MP3 players and Gameboys. We adults are the immigrants in their world."

Some critics have made much of the fact that the laptop program uses Apple computers and the Apple OSX operating system rather than the vastly more common PC operating system used by IBM, Dell, Gateway, and other manufacturers. John Lunt, the technology coordinator at Freeport Middle School, laughs out loud at the idea. "Only adults see a PC-Apple conflict," he explains. "For kids, switching back and forth is a piece of cake. It simply doesn't make any difference to them. And when they move into industry, the fact that they can use both means they're ahead of other people who can use only one."

The iBook impact goes far beyond turning the heads of teenage techno-weenies. Steve Rogers, principal at Lyman Moore Middle School, suddenly develops a hitch in his voice when he talks about a particular student with severe learning disabilities. "We were having a PET, a pupil evaluation team, meeting, and each teacher kept repeating the same thing — that the student had been on a definite upward trend over the past two months, and no one knew why. Nothing was different — except it was the two months he had been using his laptop."

"Oh my, yes," exclaims Linda Pritchard, a special-education teacher at Freeport Middle School, when she hears the story. "No one is late for my classes anymore. I don't have to go out into the hall searching for kids. Kids who weren't necessarily motivated to read are reading without realizing it. We have kids who are arriving early for school, which is really weird for middle school."

NONE of this surprises Angus King. "I was firmly convinced that this had huge potential and could be groundbreaking in the way education works in Maine," he recalls. He needed that conviction when he proposed the laptop idea in February 2000 and was almost buried under criticism [DOWN EAST, November 2000]. He had to dip deep into his store of public credibility to get the plan through the legislature and protect its funding in the face of a steadily worsening state financial situation, and he admits to making some mistakes along the way.

"I'm sure as hell glad it's working," he allows today. "Because if it hadn't, it would be known as King's Folly for generations."

King recalls attending the National Governors Conference for years and hear-

ing the same topics over and over. "One day I had this clear, vivid insight that everyone was doing the same thing — investing in research and development, tax reform, learning-results education. It occurred to me that, if everyone else is doing the same thing, you're not getting anywhere — you're just keeping up. We were always going to be thirty-seventh. A few months later, my staff brought the laptop idea to me — and I knew we didn't have to be thirty-seventh anymore."

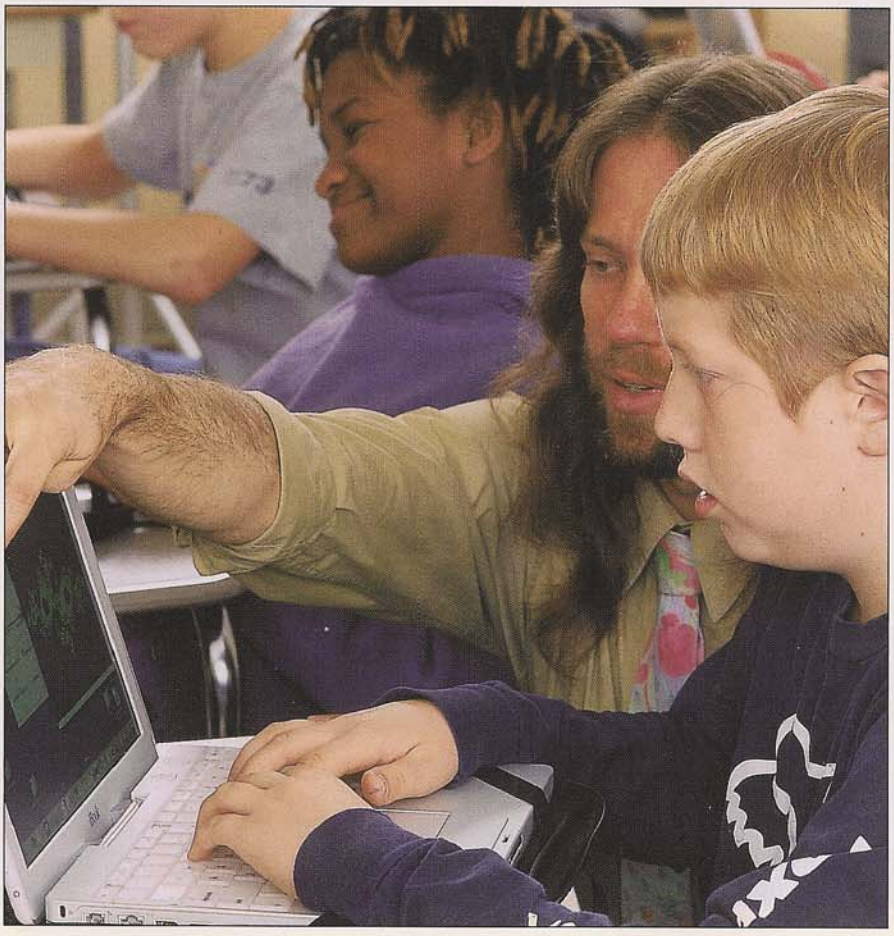
Whether the program survives King's administration remains to be seen. Governor John Baldacci expressed support for the project during last year's gubernatorial campaign, but he and the incoming legislature face a billion-dollar state budget deficit over the next two years.

"But it's so cheap," King reasons. "You could maintain this program forever, right up through high school, for $15 million a year. That's less than 1 percent of the total state school budget, and nobody can show me a 1 percent expenditure that could have remotely equal impact."

"Ten years from now, we'll see today's laptop kids working halfway around the world — from their homes in Maine," predicts Kelly Arsenault, a teacher who oversaw the laptop program at Lyman Moore. "We're finally discovering a way to keep Maine youngsters in Maine. More than that, businesses are looking to our state, other countries are looking to our state to become a leader in technology. Our kids will be better trained — not in a particular program but in being computer *aware* — and more knowledgeable than anyone else in the world."

Down the hall from Arsenault, Ray St. Pierre sounds a three-minute warning that his social studies class is about to end. Students begin shutting down their computers and zipping them into their black canvas cases — with the carrying strap slung across their chests, the teens walk down the hall with laptops bouncing off their hips like Information Age gunslingers.

'You know, it's interesting," St. Pierre muses. "Some teachers thought they'd have to rewrite all their lesson plans and change their teaching styles to accommodate computers. But we haven't. If anything, teaching has become more exciting. I know teachers who were preparing to retire who have decided to stay in the classroom because of laptops. The computers are just tools, like pencils and books. But, oh my God, we've never had a tool like this." □



What Students Get

The eggshell-white, battery-operated Apple iBooks — which are owned by the state, not the students — come preloaded with word-processing, spreadsheet, and internet-access programs, as well as graphics and video software, a CD player, and an encyclopedia. The Internet Explorer program that gives students web access operates through the school's server, which has a built-in filter to prevent them from visiting inappropriate websites. Some schools allow students to take the computers home with them, while others require the laptops to stay behind at the end of the day, plugged into recharging stations.

Most computer-savvy adults are accustomed to gaining access to the internet or networking with other computers through telephone lines or cable modems. By contrast, Maine's iBooks are wireless, linking to a central server or node in each school, with a range of about 150 feet. The area served by a wireless node is called a "cloud."

The clouds aren't limited by a school building's walls, and students are becoming aware of that. In schools where students are allowed to take their laptops home, administrators are already hearing stories of youngsters who badger their parents into driving them to the school parking lot on weekends — so they can sit outside and use their laptops to tap into the node's internet connection to do their homework. —*J.C.*